11-15-00

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

APPLICANT(S):   Jonathan Lenchner

TITLE: **METHOD AND APPARATUS FOR CONDUCTING COINLESS TRANSACTIONS**

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SIR:

Enclosed are the following papers relating to the above-named application for patent:

> Application - 9 pages of Specification, 4 pages of Claims and 1 page of Abstract
> 2 Sheets of informal drawing(s)
> Declaration
> 1 Assignment with Cover Sheet
> Associate Power of Attorney

CLAIMS AS FILED				
	NO. FILED	NO. EXTRA	RATE	CALCULATIONS
Total Claims	23 -20 =	3	x $18 =	$ 54
Independent Claims	5 - 3 =	2	x $80 =	$160
Multiple Dependent Claim(s), if applicable			$260 =	$ 0
Basic Fee				$ 710
			TOTAL FEE:	$ 924

Please file the application and charge **IBM Corporation's Deposit Account No. 50-0510** the amount of <u>$924</u>, to cover the filing fee. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Deposit Account No. 50-0510** as required to correct the error. *Duplicate copies of this letter are enclosed.*

Please address all correspondence to: **Kevin M. Mason, Ryan, Mason & Lewis, LLP, 1300 Post Road, Suite 205, Fairfield, CT 06430.** Telephone calls should be made to the under-signed attorney at (203) 255-6560.

Respectfully,

Kevin M. Mason
Reg. No. 36,597
Attorney for Applicant(s)

Date: November 13, 2000
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METHOD AND APPARATUS FOR CONDUCTING COINLESS TRANSACTIONS

Field of the Invention

5   The present invention relates generally to retail transaction systems, such as point-of-sale (POS) terminals, and, more specifically, to a method and apparatus for processing coinless transactions.

Background of the Invention

10   In order to complete a transaction for the purchase of goods or services, the buyer and seller typically must agree on a purchase price, and the buyer must tender the purchase price to the seller. Typically, the buyer tenders the purchase price using currency (i.e., paper currency, coins or both) or some electronic form of payment, such as a credit card or debit card. When currency is utilized to pay a purchase price that is not a

15   whole-unit amount, such as a whole-dollar amount, the buyer will often receive change back from the seller in the form of coins, and possibly paper currency, to cover the difference between the tendered amount and the purchase price. The fractional cost of the transaction is the amount that the purchase price exceeds a whole-unit amount. For example, if the purchase price for a transaction is $5.60, then the fractional cost of the

20   transaction is sixty cents ($0.60).

While the increase in electronic transactions has greatly reduced the amount of transactions involving traditional currency, the nature of many transactions makes them unsuitable for electronic payment. Many consumers, for example, do not have access to a credit card or a debit card. In addition, the nature of many transactions

25   makes them unsuitable for electronic payment. For example, the transaction costs associated with electronic transactions often discourage sellers from accepting electronic payment for a relatively small purchase. In addition, many point-of-sale (POS) terminals that process such transactions do not include the necessary equipment that is required to

process electronic transactions, such as a card reader and a network connection to an electronic transaction processor, especially for remote POS terminals that typically process only small amounts, such as vending machines. Thus, for the foreseeable future, some percentage of transactions will continue to be paid for using traditional currency.

5   Buyers and sellers alike, however, do not like to deal with coins. The exchange of coins between buyers and sellers typically slows down the transaction. Sellers must maintain a sufficient amount of coinage in each possible denomination in order to provide proper change for each transaction. In addition, sellers must typically roll excess coins in order to deposit them in the bank. Buyers must deal with the

10   inconvenience of carrying coins, and often accumulate large amounts of coins, such as in a jar or coin bank at home. Thus, the significant amount of coins that are out of active circulation at a given time requires the government to produce even greater amounts of coins, further increasing societal costs. A need therefore exists for a method and apparatus for processing coinless transactions.

15   United States Patent Number 5,869,826 to Eleftheriou discloses a system for conducting coinless transactions that utilizes a magnetic stripe data card that interacts with a POS terminal. In the Eleftheriou system, the fractional transaction cost of a purchase is compared with an existing change balance stored on the data card. When the change balance does not cover the fractional cost of the transaction, a change renewal

20   algorithm automatically increases the balance on the card by an amount equal to the difference between the cost of the transaction and the next highest whole dollar amount. This amount is also added to the transaction cost, raising it to the next highest whole dollar amount. Likewise, when the balance of change stored on the card does cover the fractional dollar cost of the transaction, the system provides a change depletion algorithm

25   that automatically decreases the balance on the card by an amount equal to the fractional dollar cost of the transaction and deducts a corresponding amount from the transaction cost, lowering it to the next lowest whole dollar amount.

While the Eleftheriou system results in a whole dollar cost for the transaction and eliminates the requirement to exchange coins of any denomination for commercial transactions, the Eleftheriou system suffers from a number of limitations, which, if overcome, could further reduce the number of transactions involving coins.

Specifically, the Eleftheriou system requires a buyer to carry at least one card in order to process the fractional costs of each transaction. Each buyer could conceivably be required to carry additional cards, however, if all sellers do not adopt a uniform protocol for processing fractional transaction costs in this manner. Furthermore, the Eleftheriou system requires the POS terminal to include a card reader that interacts with the data card to process the fractional transaction costs.

A need therefore exists for a method and apparatus for processing coinless transactions that does not require the buyer to carry a data card. A further need exists for a method and apparatus for processing coinless transactions that does not require the POS terminal to include a card reader.

Summary of the Invention

Generally, a method and apparatus are disclosed for facilitating coinless transactions. The disclosed POS terminal rounds a fractional transaction cost up or down to a whole-unit amount and alleviates the need to exchange coins in currency-based transactions. According to one aspect of the invention, a fractional transaction cost is rounded up or down to a whole-unit amount based on a generated random number that ensures fairness to both buyers and sellers, over time. If a transaction purchase price is $N.C$ units, where N is a non-negative integer and C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, then a buyer will be charged $N+1$ units with a probability, p, equal to $C/100$, and N units with a probability of $1-p$.

According to another aspect of the invention, the random number generation process ensures that the rounding process does not favor buyers or sellers, for

example, by (i) incorporating a buyer-provided offset that guarantees that the seller cannot introduce a bias into the generated random number that favors the seller, or (ii) having the generation of the random number performed or supervised by a trusted third party.

According to another aspect of the invention, the buyer can increase his or her odds of having the final purchase price rounded down by exposing more than just the amount by which the rounded up cost exceeds the fractional cost. Thus, if a transaction purchase price is N.C units, where N is any non-negative integer and C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, and the buyer tenders an amount of X units, where X is greater than N, then a buyer will be charged X units with a probability of $(N + p) / X$ and zero units with a probability of $1 - ((N + p) / X)$, where, as earlier, p is equal to $C / 100$.

A more complete understanding of the present invention, as well as further features and advantages of the present invention, will be obtained by reference to the following detailed description and drawings.

Brief Description of the Drawings

FIG. 1 is a schematic block diagram showing the architecture of an illustrative coinless point-of-sale (POS) terminal in accordance with the present invention; and

FIG. 2 is a flow chart describing an exemplary coinless transaction process incorporating features of the present invention.

Detailed Description of Embodiments

FIG. 1 is a schematic block diagram of a point-of-sale (POS) terminal 100 in accordance with the present invention. According to one feature of the present invention, the POS terminal 100 facilitates coinless transactions by rounding a fractional

transaction cost up or down to a whole-unit amount. In this manner, the POS terminal 100 alleviates the need to exchange coins in currency-based transactions. More specifically, the POS terminal 100 of the present invention rounds a fractional transaction cost up or down to a whole-unit amount based on a generated random number. The generated random number ensures that, on average, the rounding process does not favor either the seller or buyers.

For example, if the purchase price for a given transaction is $5.60, then the POS terminal 100 should generate a final transaction price of $5.00 with a probability of 40%, and a final transaction price of $6.00 with a probability of 60%. If a random number is generated between 0 and 99, a generated number between 0 and 59 indicates that the buyer will pay $6.00, and a generated number between 60 and 99 indicates that the buyer will pay $5.00. More generally, if a transaction purchase price is $N.C$ units, with p equal to $C/100$, where N is a non-negative integer and C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, then a buyer will be charged $N+1$ units with a probability of p, and N units with a probability of $1-p$.

In a further variation, the random number generation process can incorporate a buyer-provided offset that guarantees that the seller cannot introduce a bias into the generated random number that favors the seller. In this manner, both the buyer and the seller alike can be certain that the generated random number is fair. Without such a buyer-provided offset, the seller could systematically build in a bias favoring himself by generating random numbers which tend to be very slightly low. The buyer-provided offset can, for example, be specified by the buyer in response to a query from the POS terminal 100 or be generated from a serial number or other numeric identifier obtained from a bill (paper currency) provided by the buyer. Thus, the random number generated by the seller (or the POS terminal 100) can be added to the buyer-provided offset, and the modulo-100 result determines whether the rounding is done in an upward or downward manner. In yet another variation, fairness can be ensured by having the generation of the

random number performed or supervised by a trusted third party.

A further benefit of the buyer-provided offset is that the buyer input permits buyers to feel as if they are affecting the determination of the final purchase price. In addition, when the buyer-provided offset is obtained from a serial number or other numeric identifier obtained from paper currency, the POS terminal 100 now has control of the money, so that the buyer cannot rescind the transaction if the rounding process favors the seller.

According to another feature of the present invention, the buyer can increase his or her odds of having the final purchase price rounded down by exposing more than just the amount by which the rounded up cost exceeds the fractional cost. In other words, if a buyer is interested in purchasing an item having a cost of $0.60, and, for example, has no single dollar bills, and thus tenders a five dollar bill ($5.00), the system 100 will round the purchase price down to zero with a probability of 440/500, or round the purchase price up to five dollars ($5.00) with a probability of 60/500. More generally, if a transaction purchase price is N.C units, where N is any non-negative integer, C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, and p equals C/100, and the buyer tenders an amount of X units, where X is greater than N, then a buyer will be charged X units with a probability of $(N + p) / X$ and zero units with a probability of $1 - ((N + p) / X)$,

The POS terminal 100 may be embodied as any POS terminal, such as a personal computer in a retail environment or another device that processes transactions in which a customer tenders currency in exchange for a product (good or service). As shown in FIG. 1, the illustrative POS terminal 100 includes a processor 110, a data storage device 120 and an optional communications port 130, as modified herein to carry out the features and functions of the present invention. The processor 110 may be linked to each of the other listed elements, either by means of a shared data bus, or dedicated connections, as shown in FIG. 1. The communications port 130 optionally connects the

POS terminal 100 to other remote devices, such as a central server, or credit card processing network (not shown). The communications port 130 may include multiple communication channels for simultaneously establishing a plurality of connections.

The data storage device 120 and/or ROM (not shown) are operable to store one or more instructions, discussed further below in conjunction with FIG. 2, which the processor 110 is operable to retrieve, interpret and execute. As discussed further below, the data storage device 120 includes a random number generator 150, and a coinless transaction process 200, discussed below in conjunction with FIG. 2. Generally, the random number generator 150 may be embodied as any conventional random number generator. The random number generator 150 generates a random number, giving a transaction in accordance with the present invention its probabilistic nature. The coinless transaction process 200 processes coinless transactions by rounding a fractional transaction cost up or down to a whole-unit amount.

FIG. 2 is a flow chart describing an exemplary coinless transaction process 200 incorporating features of the present invention. As shown in FIG. 2, the coinless transaction process 200 initially determines the transaction purchase price (N.C) during step 210, based upon traditional pricing of each purchased item.

Thereafter, the coinless transaction process 200 receives an optional buyer-provided offset value during step 220 between 0 and 99. As previously indicated, the optional buyer-provided offset value helps the buyer to ensure that the final transaction price is determined fairly. The buyer-provided offset can be specified, for example, by the buyer in response to a query from the POS terminal 100 during step 220, or it may be generated from a serial number or other numeric identifier obtained, e.g., from a bill (paper currency) provided by the buyer or from the purchased item. To achieve the desired fairness to the buyer, the offset should not be visible to the process which generates the seller-supplied random increment in step 240.

At this point (step 230), the seller should get the buyer's unequivocal

commitment to the transaction, for example, by getting the buyer to tender the maximum dollar amount of the transaction. (Note, in this regard, that a refund would typically not be processed for the amount determined following random generation of the final number, but rather for the amount of the published price of the item, or perhaps by an amount determined using an independent random process.)

The coinless transaction process 200, which is typically executed by the seller, then generates a random increment between 0 and 99 during step 240. As noted in step 220, this random process should not have access to the buyer provided offset. The seller-generated value ensures that the final transaction price is calculated fairly from the seller's perspective.

The buyer-provided offset, if any, and the seller-generated increment are combined during step 250, modulo 100, to determine a random number, R, that will determine the final transaction price. A test is performed during step 260 to determine if the random number, R, is less than C.

If it is determined during step 260 that the random number, R, is less than C, then the final purchase price will be N + 1 units. If, however, it is determined during step 260 that the random number, R, is not less than C, then the final purchase price will be set to N units during step 280. Program control then terminates.

It is noted that the generation of the random number, R, during steps 220 and 240 to 250 can be replaced by a single step of generating a random number, provided the buyer and seller can be satisfied that the random number is generated in a fair manner. For example, the random number can easily be generated in a fair manner if the generation of the random number is performed or supervised by a trusted third party.

For example, suppose a buyer desires to purchase a particular product from a vending machine having a purchase price of 60 cents ($0.60), and inserts a dollar bill into the vending machine. The coinless transaction process 200 generates a random number, R, in the manner described above, and will round the final purchase price down

to zero if the random number is between 60 and 99 and will round the final purchase price up to one dollar ($1.00) if the random number is between 0 and 59. Once the final price is determined, and the buyer has tendered payment, if necessary, the selected product is delivered to the buyer in a conventional manner. Generally, with probability of

5 .60, the buyer will be charged $1.00 and with a probability of .40, the buyer will be charged nothing. The expected cost to the buyer is then 60 cents, over time, so the transaction is fair.

It is to be understood that the embodiments and variations shown and described herein are merely illustrative of the principles of this invention and that various

10 modifications may be implemented by those skilled in the art without departing from the scope and spirit of the invention.

Claims

What is claimed is:

1.   A method for processing a transaction, comprising:

      determining a purchase price for said transaction, said purchase price including a fractional cost that exceeds a whole-unit amount;

      generating a random number; and

      rounding said purchase price up or down to a whole-unit amount based on said random number.

2.   The method of claim 1, wherein said step of generating a random number is performed by a third party to said transaction.

3.   The method of claim 1, wherein said step of generating a random number is supervised by a third party to said transaction.

4.   The method of claim 1, wherein said step of generating a random number further comprises the step of obtaining a seller-generated increment value.

5.   The method of claim 1, wherein said step of generating a random number further comprises the step of obtaining a buyer-provided offset value.

6.   The method of claim 1, wherein a buyer commitment to the transaction is obtained by means of currency submitted to a vending machine.

7.   The method of claim 1, wherein a buyer commitment to the transaction is obtained by means of currency submitted to a trusted third party prior to the generation of

said random number.

8.   The method of claim 5, wherein said buyer-provided offset value is specified by the buyer in response to a query.

9.   The method of claim 5, wherein said buyer-provided offset value is generated from a serial number obtained from paper currency provided by the buyer.

10.   The method of claim 5, wherein said buyer-provided offset value is generated from a numeric identifier obtained from a product associated with said transaction.

11.   The method of claim 5, wherein the seller generated random number is made without access to said buyer-provided offset value.

12.   A method for processing a transaction, comprising:
        determining a purchase price, N.C, for said transaction, said purchase price including a fractional cost, p, equal to C/100, that exceeds a whole-unit amount, N;
        generating a random number; and
        rounding said purchase price up to a price of N+1 units with a probability of p and down to a price of N units with a probability of (1-p).

13.   The method of claim 12, wherein said step of generating a random number is performed in a manner that prevents a bias towards a buyer or seller.

14.   The method of claim 12, further comprising the step of obtaining a buyer commitment to the transaction.

15.   A method for processing a transaction, comprising:

determining a purchase price, N.C, for said transaction, said purchase price including a fractional cost, p, equal to C/100, that exceeds a whole-unit amount, N;

receiving an amount of X units from a buyer, where X is greater than N;

generating a random number; and

rounding said purchase price up to a price of X units with a probability of $((N + p) / X)$ and down to a price of zero units with a probability of $1 - ((N + p) / X)$.

16.   The method of claim 15, wherein said step of generating a random number is performed in a manner that prevents a bias towards a buyer or seller.

17.   The method of claim 15, further comprising the step of obtaining a buyer commitment to the transaction.

18.   A system for processing a transaction, comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

determine a purchase price for said transaction, said purchase price including a fractional cost that exceeds a whole-unit amount;

generate a random number; and

round said purchase price up or down to a whole-unit amount based on said random number.

19.   The system of claim 18, wherein said random number is generated in a manner that prevents a bias towards a buyer or seller.

20.   The system of claim 18, wherein said processor is further configured to obtain a buyer commitment to the transaction.

21.   The system of claim 18, wherein said purchase price, N.C, for said transaction includes a fractional cost, p, equal to C/100, that exceeds a whole-unit amount, N, and said purchase price is rounded up to a price of N+1 units with a probability of p and rounded down to a a price of N units with a probability of (1-p).

22.   The system of claim 18, wherein said purchase price, N.C, for said transaction includes a fractional cost, p, equal to C/100, that exceeds a whole-unit amount, N and wherein an amount of X units is received from a buyer, where X is greater than N, and wherein said purchase price is rounded up to a price of X units with a probability of ((N + p) / X) and rounded down to a a price of zero units with a probability of 1 - ((N + p) / X).

23.   An article of manufacture for processing a transaction, comprising:
          a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:
          a step to determine a purchase price for said transaction, said purchase price including a fractional cost that exceeds a whole-unit amount;
          a step to generate a random number; and
          a step to round said purchase price up or down to a whole-unit amount based on said random number.

METHOD AND APPARATUS FOR CONDUCTING COINLESS TRANSACTIONS

Abstract of the Disclosure

5   A method and apparatus are disclosed for facilitating coinless transactions by rounding a fractional transaction cost up or down to a whole-unit amount. A fractional transaction cost is rounded up or down to a whole-unit amount based on a generated random number that ensures fairness to both buyers and sellers, over time. If a transaction purchase price is N.C units, where N is any non-negative integer and p is an

10   integer between 0 and 99 indicating the fractional cost between 0 and .99, with p equal to C/100, then a buyer will be charged N+1 units with a probability of p, and N units with a probability of 1-p. The random number generation process can ensure that the rounding process does not favor buyers or sellers, for example, by (i) incorporating a buyer-provided offset that guarantees, or (ii) having the generation of the random number

15   performed or supervised by a trusted third party. The buyer can also increase his or her odds of having the final purchase price rounded down by exposing more than just the amount by which the rounded up cost exceeds the fractional cost. Thus, if a transaction purchase price is N.C units, with p equal to C/100, where N is any non-negative integer and C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, and

20   the buyer tenders an amount of X units, where X is greater than N, then a buyer will be charged X units with a probability of $(N + p) / X$ and zero units with a probability of $1 - ((N + p) / X)$.

1500-161.APP

25

COINLESS
POINT-OF-SALE
(POS)
TERMINAL
100

TO
REMOTE
DEVICES

COMM.
PORT(S)
130

PROCESSOR

110

DATA STORAGE
DEVICE 120

RANDOM NUMBER GENERATOR

150

COINLESS TRANSACTION PROCESS

200

FIG. 1

FIG. 2

COINLESS TRANSACTION PROCESS -- 200

DETERMINE TRANSACTION PURCHASE PRICE (N.C) BASED ON TRADITIONAL PRICING OF EACH PURCHASED ITEM
210

RECEIVE OPTIONAL BUYER-PROVIDED OFFSET VALUE BETWEEN 0 AND 99 IN A MANNER NOT VISIBLE TO SELLER'S RANDOM NUMBER GENERATOR
220

OBTAIN BUYER COMMITMENT TO TRANSACTION (BY EITHER PROVIDING CURRENCY TO A VENDING MACHINE OR TRUSTED 3RD PARTY)
230

SELLER GENERATES RANDOM INCREMENT BETWEEN 0 AND 99
240

COMBINE BUYER-PROVIDED OFFSET, IF ANY, AND SELLER-GENERATED RANDOM INCREMENT, MODULO 100, TO DETERMINE RANDOM NUMBER, R
250

IS RANDOM NUMBER, R, LESS THAN C?
260
NO   YES

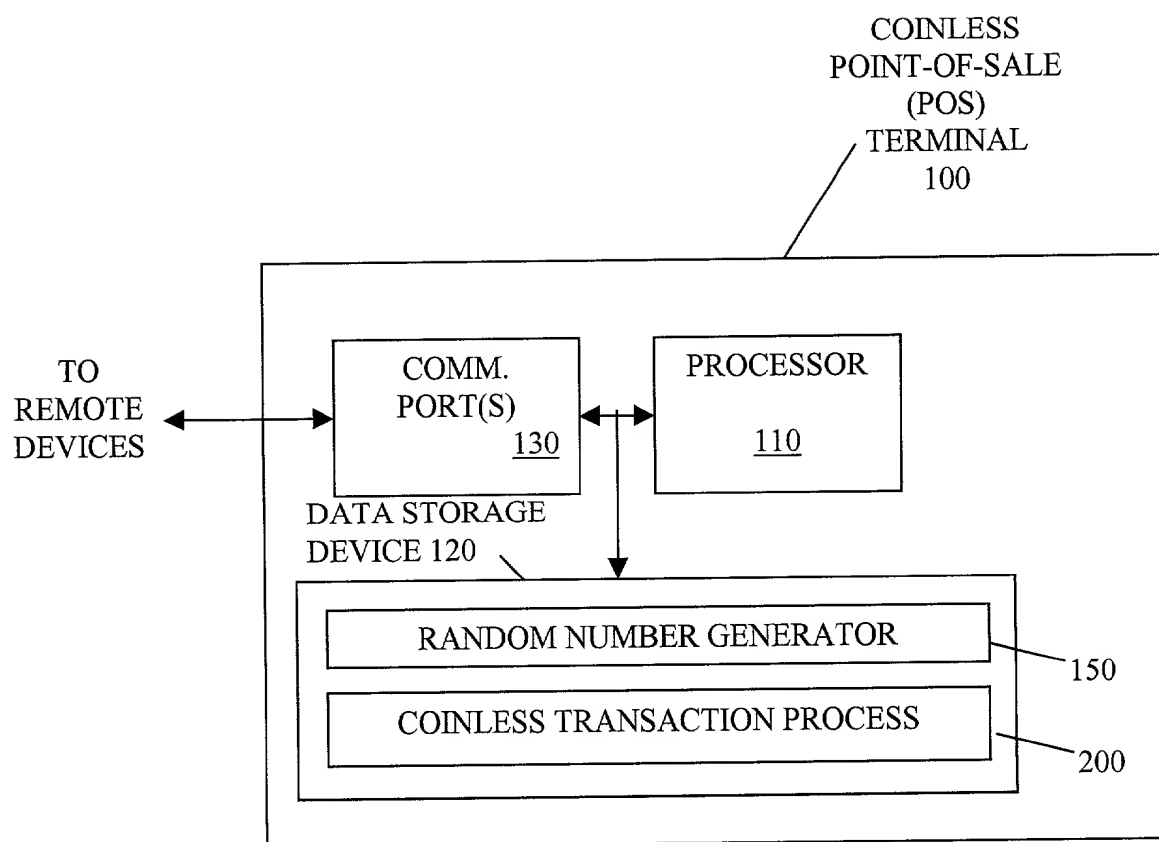FINAL PURCHASE PRICE IS N UNITS
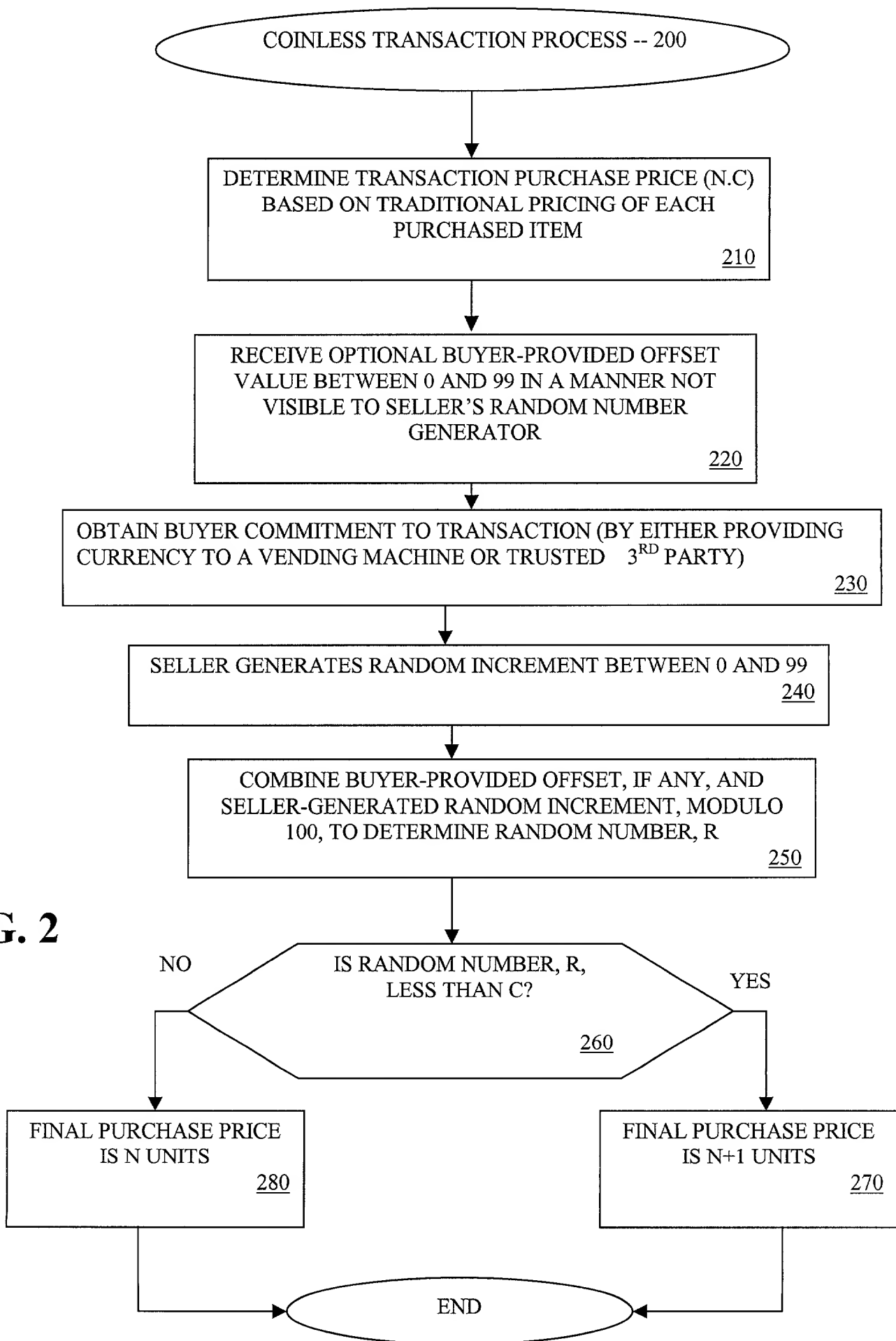280

FINAL PURCHASE PRICE IS N+1 UNITS
270

END

DECLARATION

AS A BELOW NAMED INVENTOR, I hereby declare that:
My residence, post office address and citizenship are as stated next to my name.
I believe that I am the original, first and sole (*if only one name is listed below*), or an original, first and joint inventor (*if plural names are listed below*), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE: **METHOD AND APPARATUS FOR CONDUCTING COINLESS TRANSACTIONS**

the specification of which is attached hereto or indicates an attorney docket no., or:

☐ was filed in the U.S. Patent & Trademark Office on and assigned Serial No.,

☐ and (*if applicable*) was amended on _____.

    I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37, Code of Federal Regulations §1.56. I hereby claim foreign priority benefits under Title 35, U.S. Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

<u>Priority Claimed</u>:

    Yes [ ]   No[ ]

_____

(*Application Number*)   (*Country*)   (*Day/Month/Year filed*)

    Yes [ ]   No[ ]

_____

(*Application Number*)   (*Country*)   (*Day/Month/Year filed*)

    I hereby claim the benefit under Title 35, U.S. Code §120, of any United States application(s), or §365(c), of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International applications(s) in the manner provided by the first paragraph of Title 35, U.S. Code §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

_____

(*Application Serial Number*)   (*Filing Date*)   (*STATUS: patented, pending, abandoned*)

_____

(*Application Serial Number*)   (*Filing Date*)   (*STATUS: patented, pending, abandoned*)

    I hereby appoint the following attorneys: **MANNY W. SCHECTER**, Reg. No. 31,722; **LAUREN BRUZZONE**, Reg. No. 35,082; **CHRISTOPHER A. HUGHES**, Reg. No. 26,914; **EDWARD A. PENNINGTON**, Reg. No. 32,588; **JOHN E. HOEL**, Reg. No. 26,279; **JOSEPH C. REDMOND, Jr.**, Reg. No. 18,753; **DOUGLAS W. CAMERON**, Reg. No. 31,596; **LOUIS P. HERZBERG**, Reg. No. 41,500; **STEPHEN C. KAUFMAN**, Reg. No. 29,551; **DANIEL P. MORRIS**, Reg. No. 32,053; **PAUL J. OTTERSTEDT**, Reg. No. 37,411; **LOUIS J. PERCELLO**, Reg. No. 33,206; **ROBERT M. TREPP**, Reg. No. 25,933; and **MARIAN UNDERWEISER**, Reg. No. 46,134; each of them of **INTERNATIONAL BUSINESS MACHINES CORPORATION**, Thomas J. Watson Research Center, P.O. Box 218, Yorktown Heights, New York 10598; to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

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I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF FIRST OR SOLE INVENTOR: Jonathan Lenchner   Citizenship United States of America

Inventor's signature: _____ Date: November 10, 2000

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FULL NAME OF SECOND JOINT INVENTOR: _____ Citizenship _____

Inventor's signature: _____ Date: _____

Residence & Post Office address:

FULL NAME OF THIRD JOINT INVENTOR: _____ Citizenship _____

Inventor's signature: _____ Date: _____

Residence & Post Office address:

Attorney Docket No. YOR920000621US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S):   Jonathan Lenchner

SERIAL NO.:   Unassigned

FILED: Concurrently Herewith

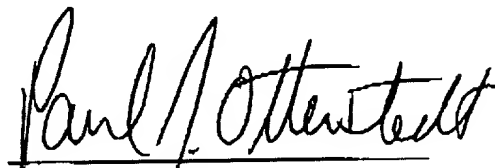TITLE: **METHOD AND APPARATUS FOR CONDUCTING COINLESS TRANSACTIONS**

ASSOCIATE POWER OF ATTORNEY

Please recognize **JOSEPH B. RYAN**, Reg. No. 37,922; **KEVIN M. MASON**, Reg. No. 36,597; **WILLIAM E. LEWIS**, Reg. No. 39,274; **ROBERT J. MAURI**, Reg. No. 41,180; and **WAYNE L. ELLENBOGEN**, Reg. No. 43,602; each of them of **RYAN, MASON & LEWIS, LLP**, 1300 Post Road, Suite 205, Fairfield, CT 06430 as associate attorneys in the above-mentioned application, with full power to prosecute said application, to make alterations and amendments therein, and to transact all business in the Patent and Trademark Office connected therewith.

Telephone calls should be made to Kevin M. Mason by dialing (203) 255-6560.

All written communications are to be sent to Kevin M. Mason, Esq., Ryan, Mason & Lewis, LLP, 1300 Post Road, Suite 205, Fairfield, CT 06430.

Dated: _NOVEMBER 13, 2000_

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